

The levels of learners' involvement in online learning

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## **Background**

With the development and wide application of online learning in many courses, online courses show many advantages for learners, such as convenience, flexibility, self-control, connection, individualized attention, etc. It seems to give more freedom to learners rather than learning in a classroom. However, learners' involvement is the key factor of effectiveness of online learning. The levels of learners' involvement in online learning imply learners' different levels of interaction with media, learning materials, peers, instructors and themselves. In the online learning settings interaction has been regarded as one of the most important elements that affect learning outcomes (Kang & Imt, 2013). In the paper, the model of LPILs (Learners' Pyramid of Involvement Levels) of online learning is proposed to identify the degree of effectiveness of learner' online learning. Learners' involvement in online course occurs at three different levels which begin at the initial stages of online involvement and interaction to the end of the online course's longevity. Each level serves as the basic foundation of the higher one. The final objective of online learning is to involve learners in the three levels of learning and help them obtain the highest level of knowledge acquisition. Behaviorism, cognitivism and constructivism have been proposed to support different levels' involvement. For the higher level learners involve, the more they will learn, what the instructional designer and learners should do is also discussed to help learners achieve the highest level.

### **Learners' Pyramid of Involvement Levels of online learning**

Hrastinski (2009) proposed to enhance online learning needs to enhance online learners' participation. However, participation is only the behavioral phenomenon of learners. The

involvement is a deeper step for learners to learn in online learning. Learners' involvement in online learning is vital to the effectiveness of learning. The involvement depends on the degree of interactions with the factors in online learning. Involvement is realized through the process of learners' interaction with other factors in online learning. There are many findings about the interaction among the factors of online learning. Generally, the interactions include interaction between learners and their peers, between instructors and students. It is based on the learner-centered opinion. When Ke (2013) proposed the finding about "an interaction arrangement with a balanced and inclusive design of all three interactions in comparison with the other arrangements, promotes most reflection- or self-regulation-oriented online discussions", the three interactions were student-to-student, student-to-content, and student-to-instructor. Chao, Hwu, and Chang (2011) also agreed the perspective that the interactions were between contents and learners, between instructors and learners, and between learners and learners. Cho and Jonassen (2009) also proposed the opinion that "an initial affect/motivation item pool yielded four factors: enjoyment of human interaction, self-efficacy for interaction with instructors, concern for interaction with students, and self-efficacy for contributing to the online community". According to these points of view, the interactions include learner-to-learner, learner-to-instructor, and learner-to-content. However, the factors in online learning setting are not only learners, instructors, peers, contents, but also the media, including platforms, supporting software during learning process and learners themselves. It is necessary to clarify these different interactions among these factors and figure out what contributions different kinds of interactions make to the involvement of learning.

Learners' Pyramid of Involvement Levels of online learning is to make clear the interactions' contribution to learners' involvement in online learning. The LPILs model tells not only the different classifications of interactions, but also the different degree of learners' learning and different knowledge they can acquire. In the levels, the lowest level is at the beginning of learning. Learners just learn how to master the usage of platform and other media in an online course. They have to interaction with media which lead them to learning contents. It is the first and lowest level of involvement. It is the preparation for a learner to start a journey for online learning. Gazioglu (2013) proposed the students who did well in online courses mastered comfortable with technology and good study skills, managed their time well and completed module tasks early or at least on time, and were self-motivated and independent learners. Therefore, the lowest level is the basic foundation for the high level of learning. The basic media literacy can lead them to the higher level of learning. In the level they master the operation literacy and knowledge. To get high effectiveness of this level learning is based on the learning theory of behaviorism. A continuous trial and exercise with the media can help them gain the operation literacy and knowledge.

When the learners well master the basic literacy, they actually start to learn. They may come to the second level of involvement. In the middle level, learners interact with and learn from learning materials and their peers and instructors. Through participation in the discussion and accomplishment of the assignments, learners totally involve in online learning. Gradually, they learn something useful based to the learning objectives. In the middle level they master the information processing literacy and knowledge. Cognitivism learning theory can well explain the

stage of involvement level. Learners start to learn based on some learning problems which may be the learning objectives. They have to analyze these problems and find the solutions by themselves through the second level of interaction. The problem-based-learning model is also used by many instructional designers in online learning. Finally learners learn the knowledge through the process of problems solving and store to their own memories. However, the stage of involvement is not the final aims. To gain information of knowledge to store in the memory is not the truth of learning. They have to form their own understanding of new knowledge and show their changing in their daily lives.

According to the learning theory of constructivism, the ideal objective of online learning is learners' self-constructed new knowledge structure. The knowledge can lead to the changes of learners' behaviors and thinking. It is the highest level of involvement in online learning and best evidence for effectiveness of learning. In the final level, learners gain the knowledge and transfer it to their own practice. How to realize the highest involvement is to help learners interact with themselves. However, most learners may just complete the first two levels of learning. They well interact with the learning content, instructors and peers. They learn how to solve the problems proposed by the course design. They perform well in the discussion and assignment. It is hard to say the learners will not gain the knowledge through the deep interaction with the factors in online learning. However, this kind of knowledge may be only the memories in their brains. The change in their performance is the achievement of knowledge. Therefore, the internal interaction within learners themselves is vital to a true meaningful learning.

In the figure of Learners' Pyramid of Involvement Levels of online learning, the readiness

of online learning is the foundation for learners' learning. After starting to learn, the lowest level is the involvement in media, including platforms and other supporting software. The type of knowledge learners gaining is the operation knowledge. In the stage, behaviorism can well support instructional design. The second level of involvement is involvement with learning materials, peers and instructors through deep interaction with them. The corresponding supporting learning theory is cognitivism. In the middle level, learners gain the literacy of information. The third and highest level is learners' involvement in learners themselves. It is based on the learning theory of constructivism. Learners have acquired the true knowledge.

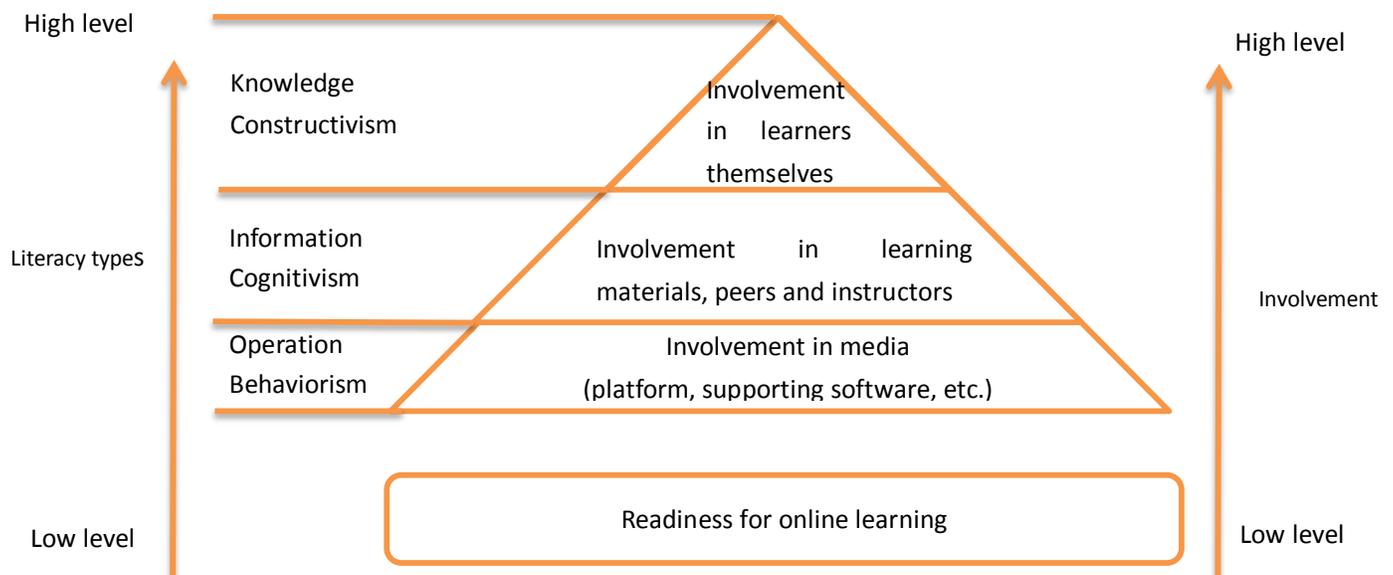


Fig.1. Learners' Pyramid of Involvement Levels of online learning

### Supported learning theories in online learning

The explanation of learning is the task of learning theory. Since the 1960s, the birth of learning theory has greatly contributed to learning and implied to instruction. Although behaviorism, cognitivism, and constructivism emerged in different periods, they all contribute to nowadays' learning and teaching. We cannot judge the new learning theory may replace the old

one. For different kinds of knowledge and different situations, the learning theories are supporting learning.

The learning theory of behaviorism was born in the 1960s. It is based on the practice of stimulus-response psychology. It focuses on the change on behaviors. The repetition, observation, practice and feedback are the most important keywords in behavioral theory. They are also vital in online learning. The learning achievement of involvement in media and other supporting software can be observed, for it is the operation knowledge. How to master the skilled operation knowledge is repetition and continuous practice. Feedback from learners and instructors is also vital, for it can adjust the practice and enhance the learning effectiveness.

The cognitivism learning theory appeared in the 1970s. It is also called cognitive information processing theory. It explains learning as an information process storing in learners' memories. Learners' brains firstly receive information, and then transform and finally store for later recall and use in a proper setting. The memory process is also studied by researchers. They also pay great attention to the importance of learners' prior knowledge. The prior knowledge can help learners acquire new knowledge. The achievement of knowledge is considered as an internal information processing. In online learning, learners interact with learning materials, other learners and instructors. They receive information from them. Learning occurs in the interactions. The change is internal occurring in learners' memories. It seems learners have completed the learning process.

Constructivism is widely applied in many learning settings. It emphasizes the knowledge constructed by learners themselves. Learning is an interaction activity through collaboration with

others and participation in an authentic setting. Chitanana (2012) carried on a study to prove that constructivist approach to course design and delivery could promote high levels of learning through collaboration and reflection. To interact with others and learning media and materials is the external performance of learning. The internal learning occurs in learners' constructing new knowledge. The learning process seems like the information processing. However, the new knowledge is not just stored in memory. It must be reconstruct the original knowledge structure. It is why constructivism supports the highest level of learners' involvement in online learning.

Alzaghoul (2012) compared behaviorism, cognitivism, and constructivism. He proposed instructional designers could make a good decision on the choice of a proper learning theory to support their online courses design. He concluded that behaviorism had so very little effect on e-learning courses. Cognitivism had high effect on e-learning courses. Constructivism saw each learner as a unique individual with unique needs and backgrounds, so it had very high effect on e-learning courses. I agree with the opinion of different learning theories can contribute to different learning activities. However, he distinguished the effectiveness of each learning theory to online learning. I don't think his conclusion is right. Although in Learners' Pyramid of Involvement Levels of online learning, certain learning theory may be seemed as more important in one level, each learning theory plays an important role in different activities of learning.

### **Implications for instructional designers and learners**

In the Learners' Pyramid of Involvement Levels of online learning, learners in each level can achieve different kinds of knowledge. Each kind of the knowledge is required to gain by learners. Different learning theories can support the learning and teaching. What should

instructors and learners do to help learners reach the highest level and gain their own knowledge?

Instructional designers have been charged with “translating principles of learning and instruction into specifications for instructional materials and activities” (Smith & Ragan, 1993). For instructional designers, they need to apply useful principles in design of online learning to help learners interact with others and get highest level of involvement. York and Richardson (2012) proposed a number of factors were found to influence interaction in online courses, such as group work, course environment, model use, discussion question type and assessment, feedback type and medium, immediacy behaviors, and instructor participation. These factors were included in the online learning design process. The design process consists of setting the learning objectives, constructing learning contents, organizing learning activities, designing assignments, selecting topics for discussion, preparing supporting materials and evaluation design. Ertmer and Newby (2013) proposed designers should understand the strengths and weaknesses of each learning theory in order to optimally select and implement strategies that supported student learning in a variety of settings. According to the Learners' Pyramid of Involvement Levels of online learning, instructional designers should make use of each learning theory in their design process to help learners learn. For the objectives, designers should consider the different levels of knowledge learners may learn in online learning. The objectives should include the achievement of different kinds of knowledge. Learning contents may consider the model of problem based learning. Problems solving can stimulate learners to learn and help them construct their own knowledge. Finch and Jefferson (2013) proposed even though the instructor

never met the class face to face, assignments could be carefully designed to employ authentic tasks and active learning techniques. Learning activities design can help learners interact with other factors in online learning. The evaluation must include formative and summative evaluation. However, the internal interaction is hard to analyze and test for online learning. Sometimes the mastery of knowledge can be shown in learners' performance in some activities. Therefore, the formative evaluation of online learning is vital. Good evaluation can not only test the degree of mastery of information learners have learnt, but also help learners gain knowledge. Cho and Kim (2013) proposed instructors scaffolding was critical for students' self-regulation for interaction with others in online learning settings. Therefore, instructors scaffolding may be used in the design of leaning content, activities and discussion.

The Learners' Pyramid of Involvement Levels of online learning is based on the learner-centered principle. When learners learn an online course, they should realize which level they may involve in. The Learners' Pyramid of Involvement Levels of online learning can help them examine what they have done and what they will do. Before starting learning in online courses, readiness is necessary. Demir and Horzum (2013) proposed readiness for online learning consists of computer/internet self-efficacy, student control, self-directed learning, motivation for learning and online communication self-efficacy. Knowledge and skills of the students for motivation, communication, control and independent learning in readiness for learning are important elements in meeting the individual needs of the students. It is the basic foundation for learners to start an online learning. Considering three aspects of dynamic online learning environments, technology, learning, and social interaction (Shen, Cho, Tsai & Marra, 2013),

distance students have opportunities to structure their own learning contexts (Ferguson, 2010). Learners must realize they are in many environments, not only the learning platform. These settings can help them construct different contexts to achieve different kinds of knowledge. In the lowest level of involvement with media, technology is the main factor. It is close to the readiness for online learning. They have to repeat and practice the operation of the media to master the basic technological literacy. However, it is the basic literacy for them to achieve more knowledge. In the second level of online learning, learners have to interact with learning materials, their peers and instructors. Learners engage in the learning activities, discussion and assignments and they achieve knowledge by actively participating in these activities. They involve in an online learning community to gain their knowledge based on the social-culture principle. In the level, some learners just follow the steps of learning contents or learning schedule. Their aim of online learning is to complete the assignments. The attitude and motivation cannot lead them to gain knowledge. They may just remember some information about the knowledge. They may busily cram for the final exam. However, the learning objectives cannot achieve. Learning in an online setting, learners own enough freedom with little supervision. The attitude and learning motivation are vital to carry on an online learning. These may decide whether the learners can reach the highest level of involvement. However, the highest level of knowledge is like the “hidden knowledge”. It is internal knowledge and cannot be observed obviously. Learners may enjoy the free journey of online learning and experience the exciting activities and discussion. However, finally what they have learnt must evaluate by the rubrics set by instructors and principles by themselves. For instructors, they try to set a

proper evaluation. However, for learners themselves, they need to carry on self-assessment and reflection what they have learnt during online learning.

### **Conclusion**

The Learners' Pyramid of Involvement Levels of online learning has three levels of different degree of involvement in online learning and in different levels learners can gain different kinds of knowledge, from the external to internal knowledge. In each level, different learning theory may support the learning and teaching. In the learner-centered levels, to help learners reach the highest level instructors should apply the learning theory in the process of online courses design, from setting the learning objectives to the evaluation. For learners themselves, they must prepare the readiness and adjust the attitude and motivation to actively participate in different levels of learning and reflect their learning achievement according to the learning objectives.

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